Handset makers had been betting on 3G to sustain what seemed like an unstoppable market suspension. This did not happen and ever since the industry has been looking for other panaceas to return it to the bonanza days. The latest hope is that we can be persuaded to replace our voice-only phones with enhanced versions, so-called 'smartphones'.

Roy Szweda, Associate Editor

Gazing into the liquid crystal

It is on replacement - rather than forging new markets - that so much of our handset-dependent industry will depend. They too will have an ever more important role to play in prolonging talk-time and keeping costs down.

In essence, the handset providers are hoping that we will want to never be separated from the 'net PCs we are said to love so much. They are hoping they can make and sell us 'smartphones' so we can not only talk but also swap photos and other data in real-time wherever we are.

One of the key components in this plan is going to be the visual human-interface or in plain language, the display. However, it must not impair the battery talk-time. A tall order especially since it must also be at a competitive price. These factors illustrate the scale of the problem. It will be a great technical achievement if it can be done. The pivotal component in the plan isn't a semiconductor but a colour display. Despite hopes in some quarters, this will likely be another form of LCD, which is still the display to beat, and its associated electronics.

The situation is not without irony. This intended resurgence of the MMIC market based on GaAs crystals will depend greatly on availability of another crystal, the liquid crystal.

This a simplification, of course, but the market is heading towards fewer sub-assemblies for the OEM to put together. The challenge for suppliers and readers of this magazine is to ensure that they can still make a contribution to the business. Basically this devolves to either being in the business of making RF power amplifiers or LED backlights.

Nevertheless, today's mobile phone market consists of two layers. The aforementioned handsets are the glamorous part. The second, and no less important to 3G, is that of base-stations. While the first has conspicuously fared badly in the downturn, that for base-stations is less dramatically bad. Good steadier business has been had because the replacement market is more assured.

Despite the current fuss about handset modules, the base-station business has been all about RF modules for quite some time; less about MMICs than discretes. This is simply because space and other constraints are less severe in a base-station. Reliability is more of an issue but power is not as they do not run off batteries. Nothing lasts forever so these modules form a good replacement market for their manufacturers. This represents a steady though less spectacular business out of the public eye. Therefore one is made to wonder if pserhaps companies will wish this to continue and want to hang onto what is a good line in times of lesser fortune for handsets.

The likelihood is that more exotic technologies such as SiC will not be required for handsets, if ever. Unless they can offer a major boost in power saving as well as offer other advantages. They can, however, be more readily integrated into these base-station RF modules. Because these modules already include active discretes substitution is less complex an issue. They bring the virtues of high temperature operation absorbing stresses more readily than their III-V predecessors. The goals of durable unattended operation are thus met. Nevertheless, it is questionable as to whether this is a sincere objective for module makers. Who wants to lose the valuable replacement market? Few would admit their preference and yet it could be longer than we think before super-durable long-life base-station equipment comes into play.